



## Italy: Market Yields Exaggerate Actual Sovereign Default Risk

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### Summary

Our initial estimate of the ten year default probability for Italian sovereign bonds is only 2.59%. While its debt/GDP ratio is high by international standards, Italy sustained equivalent levels in the mid-1990s. Also, at that time, Italy experienced much higher interest expense to revenue ratios without defaulting. Even if the average interest rate on Italy's overall public debt reaches 7% (a process that will take several years given the term structure of the nation's debt) the interest/revenue ratio will remain below mid-1990s levels. Further, Italy has decisively addressed population aging related expenses and the nation's declining fertility rate has stabilized in recent years. It appears that investors are being richly rewarded by the current yields on Italian bonds.

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### Credit History

According to historic Moody's bond manuals<sup>1</sup>, Italy did not default on any sovereign debt from its inception as a unitary state in 1861 until 1932. At that time, the country failed to fully service its World War I debt to the US government – as did several other European states. The first outright default on publicly held debt occurred in 1940, following the country's declaration of war on Britain and France<sup>2</sup>. Since much of the debt was denominated in Sterling, the default is best interpreted as a war measure. That said a default would have been inevitable given the enormous deficit spending and destruction attendant to World War II.

Italy does not appear to have fully resumed debt service until 1952, with much of its pre-War debt rolled over into longer term bonds paying lower interest rates. Since that time, however, there has been no record of payment difficulties. Italy's relatively clean borrowing record stands in sharp contrast to that of Greece, which, according to Reinhart and Rogoff<sup>3</sup>, defaulted five times between 1826 and 1964 – remaining in a default state for over half of this period.

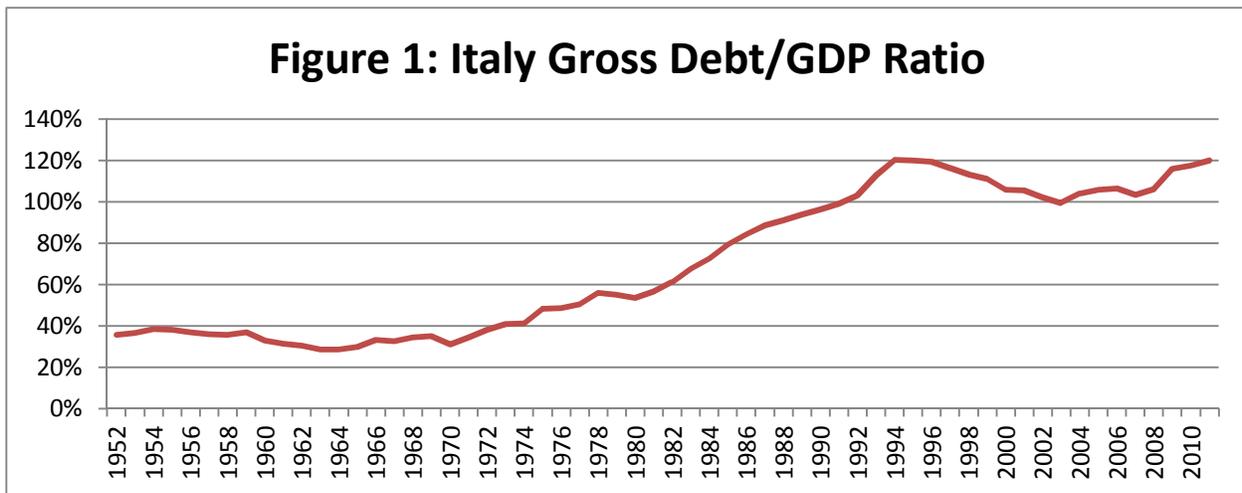
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<sup>1</sup> Moody's Government and Municipal Bond Manuals, various years. Now published by Mergent Corporation, Fort Mill, South Carolina, USA.

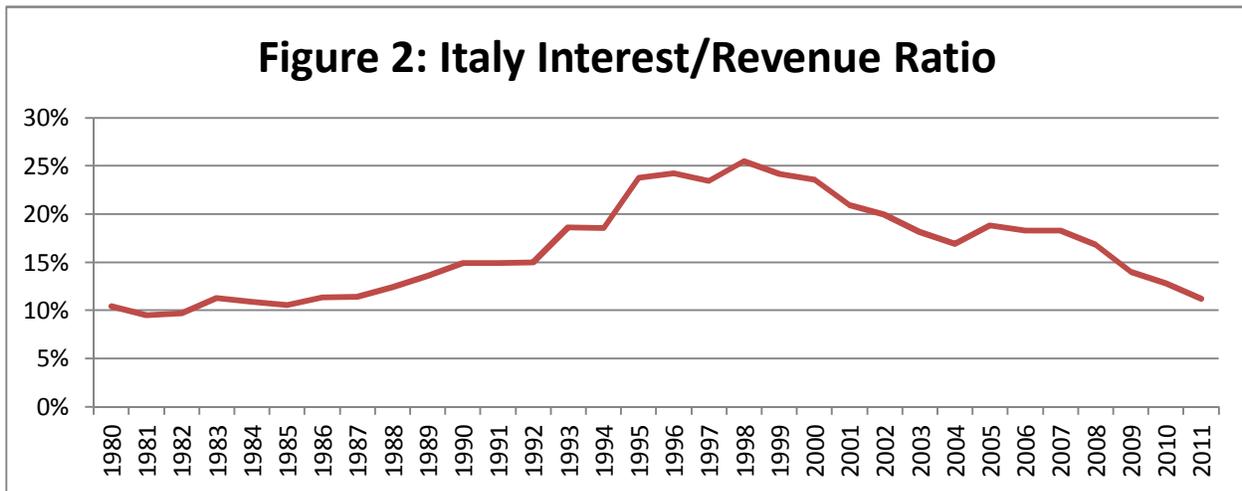
<sup>2</sup> Payment Lagging on Foreign Bonds, *New York Times*, May 26, 1941, p.28.

<sup>3</sup> Based on data sets related to Reinhart and Rogoff's *This Time is Different*, available at <http://www.reinhartandrogoff.com/>.

After 1970, Italy’s gross debt-to-GDP ratio rose steadily, reaching 120% in the mid-1990s, as shown in Figure 1. By that time, interest expenses accounted for about a quarter of central government revenue,<sup>4</sup> as shown in Figure 2. The ratio of interest expense to total revenue (also known as the “interest bite”) is a better measure of debt sustainability than debt/GDP because it more precisely captures the pressure of debt service on a government’s budget. Since default represents a choice by political leaders, its likelihood is best measured in budgetary terms -as governments vary in their ability to harvest revenue from their economies. Italy’s central government collected 44.3% of GDP in 2011 according to Eurostat, substantially above the levels in such other G8 countries as the US and Japan.



Sources *This Time is Different* dataset (reinhartandrogoff.com), IMF World Economic Outlook database.



Source: Eurostat

<sup>4</sup> Central government interest to revenue ratios quoted in this research note are computed from bulk data files retrieved from Eurostat’s web site. Our definition of Central government includes sectors S1311 (Central government) and S1314 (Social security funds, which are typically administered by the Central government).

Lower interest rates in the late 1990s and 2000s reduced the interest bite to its recent level of around 11%. The Italian Treasury took advantage of these lower rates to lengthen average bond maturities from 4.53 years in 1995 to 6.99 years in 2011<sup>5</sup>. Approximately 13% of Italy's outstanding central government bonded debt bears fixed coupons of six percent or less and matures in ten years or more.<sup>6</sup>

By 2011, the average coupon on Italian government debt was roughly 4.17%<sup>7</sup>. Even if all future debt is refinanced at 7%, it will take several years to approximate a 7% average coupon, and even then, the nation will not face as large an interest bite as it did in the mid-1990s barring a catastrophic deterioration in the government's budget balance. The likelihood of such a catastrophic budget imbalance has been substantially reduced by the European Council's June 29<sup>th</sup> decision to allow the forthcoming European Stability Mechanism (ESM) to directly recapitalize distressed banks.<sup>8</sup> To the extent that bank bailouts cease to be a national responsibility, the single largest contingent liability is removed from Italy's government balance sheet.

By comparison, Greece's 2012 default on privately held bonds occurred after that country's interest bite reached 15%. In 1995, interest expense accounted for 28% of Greek central government revenue, yet no default occurred. A plausible explanation is that Greek political leadership sustained such a high debt service burden in the mid-1990s because it did not want to sabotage its chances of being included in the Eurozone. More recently, Greek politicians have been able to take advantage of bailouts and "voluntary" debt restructuring arrangements to maintain access to foreign capital with less fiscal discipline.

Since Italy is too large to bail out and has a stronger credit record than Greece, it can be expected to sustain a much higher debt service burden than its counterpart across the Ionian Sea. That said, a fair criticism of comparisons to the mid-1990s is that Italy no longer has its own currency and thus no ability to use monetary inflation to ease its debt burden. However, according to statistics collected by inflation.eu<sup>9</sup>, consumer prices were rising at rates of between 4% and 6% during the mid-1990s, suggesting that debt monetization was limited. Given this evidence, we assume that Italy could sustain an interest bite of 25% - but no higher – as a member of the Eurozone.

## Prospects

If Italy was to run large deficits *and* face continued high borrowing rates, it would eventually reach a point of fiscal unsustainability. However, the country has been running relatively small deficits and has

<sup>5</sup> Average maturities obtained from Italian Treasury website. See [http://www.dt.tesoro.it/en/debito\\_pubblico/dati\\_statistici/vita\\_media\\_ponderata\\_dei\\_titoli\\_di\\_stato.html](http://www.dt.tesoro.it/en/debito_pubblico/dati_statistici/vita_media_ponderata_dei_titoli_di_stato.html) for the most recent data and [http://www.dt.tesoro.it/en/debito\\_pubblico/link\\_rapidi/archivio\\_dati\\_storici.html](http://www.dt.tesoro.it/en/debito_pubblico/link_rapidi/archivio_dati_storici.html) for pre-2000 values.

<sup>6</sup> Calculated from Maturity breakdown published by the Italian Ministry of Economy and Finance at [http://www.dt.tesoro.it/export/sites/sitodt/modules/documenti\\_en/debito\\_pubblico/scadenze\\_titoli\\_suddivise\\_per\\_anno/Ou\\_tstanding\\_public\\_securities\\_30-06-2012\\_GPO.pdf](http://www.dt.tesoro.it/export/sites/sitodt/modules/documenti_en/debito_pubblico/scadenze_titoli_suddivise_per_anno/Ou_tstanding_public_securities_30-06-2012_GPO.pdf).

<sup>7</sup> Estimated by dividing 2011 central government interest expense by total Italian public debt less local government debt reported on the Italian Treasury website

<sup>8</sup> See

<http://europa.eu/rapid/pressReleasesAction.do?reference=DOC/12/7&format=PDF&aged=0&language=EN&guiLanguage=en>.

<sup>9</sup> See <http://www.inflation.eu/inflation-rates/italy/historic-inflation/cpi-inflation-italy.aspx>.

both intermediate and long term stability plans that should prevent a return to high deficits, even in the absence of economic growth. In 2011, the central government deficit was 3.2% of GDP. Recently, the IMF projected the nation's 2012 deficit will be only 2.6% of GDP, despite an expected GDP growth rate of -1.9%.<sup>10</sup>

A key change implemented by the Mario Monti government is a pension reform that makes the retirement age a function of life expectancy – adjusted every three years between 2013 and 2019, and every two years thereafter.<sup>11</sup> Because the measure passed by an overwhelming 257-41 majority<sup>12</sup>, it is unlikely to be repealed by a future government.

Population aging also increases pressure on healthcare spending, but the Italian government has the ability to control many of these expenditures on a budgetary basis – a power it has used and plans to continue to exercise<sup>13</sup>. According to WHO statistics<sup>14</sup>, health expenditure as a percentage of GDP was only 9.4% in Italy in 2009 – compared to 17.8% for the US.

Finally, while Italy's low and falling fertility rate has been the object of much comment, this rate appears to have bottomed out. According to Eurostat data, Italy's fertility rate fell to 1.2 in the mid-90s but rose back over 1.4 by 2008 and remained above that level during the recent recession. While an improvement, this level is well below the 2.1 rate needed to maintain population without net immigration.

### Preliminary Stochastic Analysis

This research note is accompanied by a stochastic budget analysis created with PF2's open source Public Sector Credit Framework. PSCF allows the user to create a multi-year budget simulation and to compute default or crisis probabilities as a proportion of simulation trials that exceed a user specified fiscal threshold. The PSCF software, which requires Microsoft Windows and Excel, is available at <http://www.publicsectorcredit.org/pscf.html>.

For the Italian analysis, we assume the default point to be a 25% interest to revenue ratio based on the discussion in the "History" section above. Readers are welcome to download the software, substitute their own thresholds and rerun the analysis.

<sup>10</sup> See <http://www.imf.org/external/pubs/ft/weo/2012/update/02/pdf/0712.pdf> and <http://www.imf.org/external/pubs/ft/fm/2012/update/02/pdf/0712.pdf>.

<sup>11</sup> Details are provided in Italy's 2012 Economic and Financial Document Section I published in English and available at [http://www.dt.tesoro.it/export/sites/sitodt/modules/documenti\\_en/analisi\\_progammazione/documenti\\_programmatici/PdS\\_2012\\_eng\\_xissn\\_on-linex\\_PROTETTO.pdf](http://www.dt.tesoro.it/export/sites/sitodt/modules/documenti_en/analisi_progammazione/documenti_programmatici/PdS_2012_eng_xissn_on-linex_PROTETTO.pdf).

<sup>12</sup> The pension reform was part of a larger austerity package passed in December 2011. See <http://www.bbc.co.uk/news/world-europe-16301956>.

<sup>13</sup> Planned reductions in health expenditure are listed on page 32 of Italy's 2012 Economic and Financial Document Section III published in English and available at [http://www.dt.tesoro.it/export/sites/sitodt/modules/documenti\\_en/analisi\\_progammazione/documenti\\_programmatici/PNR\\_2012\\_xengxissn\\_on-linex\\_PROTETTO.pdf](http://www.dt.tesoro.it/export/sites/sitodt/modules/documenti_en/analisi_progammazione/documenti_programmatici/PNR_2012_xengxissn_on-linex_PROTETTO.pdf).

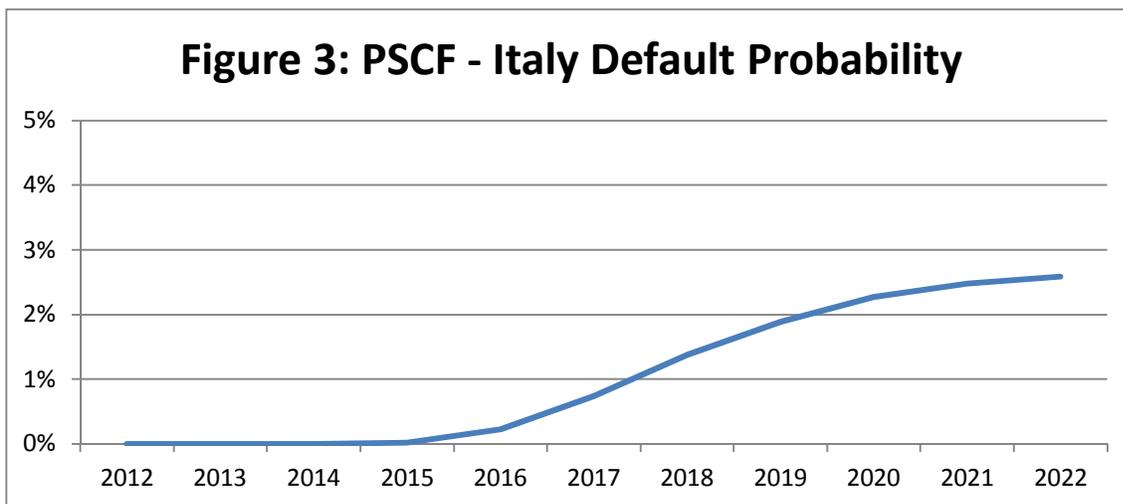
<sup>14</sup> See [http://www.who.int/gho/publications/world\\_health\\_statistics/EN\\_WHS2012\\_Full.pdf](http://www.who.int/gho/publications/world_health_statistics/EN_WHS2012_Full.pdf).

The model is considered preliminary at this point because it lacks a number of inputs which we believe are important and eventually hope to obtain. These include underlying demographic assumptions (e.g. future birth, death and migration rates) used to create the country’s budget forecast and a breakdown of budgeted expenditures by government function. The budget document we reviewed classified government spending by object (e.g., personnel costs, transfers, interest expense) rather than by function (e.g. defense, health, etc.).

The analysis we have performed shows relatively little risk of Italy breaching the 25% interest to revenue threshold during the ten year forecast period – about 2.59% by 2022. Figure 3 graphs the annualized default probabilities estimated by the model. We hope to extend the analysis to a 30-year window once we have the additional data points outlined above.

The PSCF analysis simulates the impact of a very large number of GDP growth rate, inflation and interest rate scenarios on Italy’s annual budget balance. For each simulation trial, the software computes the trajectory of debt accumulation and interest expense.

Details of the simulation assumptions can be found in the *model* and *series* tabs of the accompanying Excel workbook.



Source: Public Sector Credit Framework Italy Model, July 2012.

**Conclusion**

In recent trading, 10 year Italian bond yields exceeded equivalent maturity German yields by approximately 5%. If our estimated 10-year cumulative default probability of 2.59% is reasonably accurate, it appears that investors are being generously compensated for Italian sovereign risk, even under relatively strict recovery assumptions.

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### *Disclaimers*

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